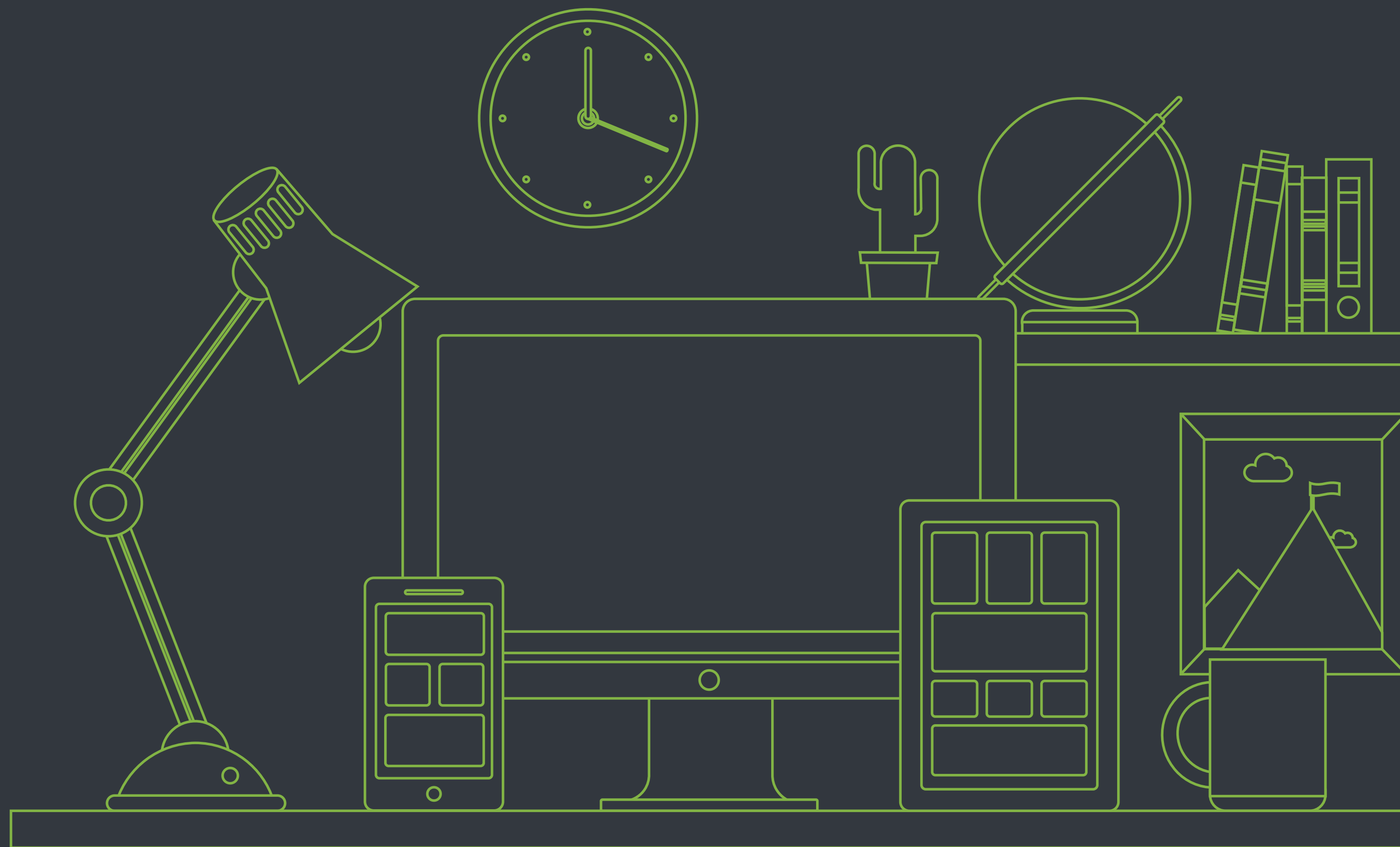




VS Codespaces

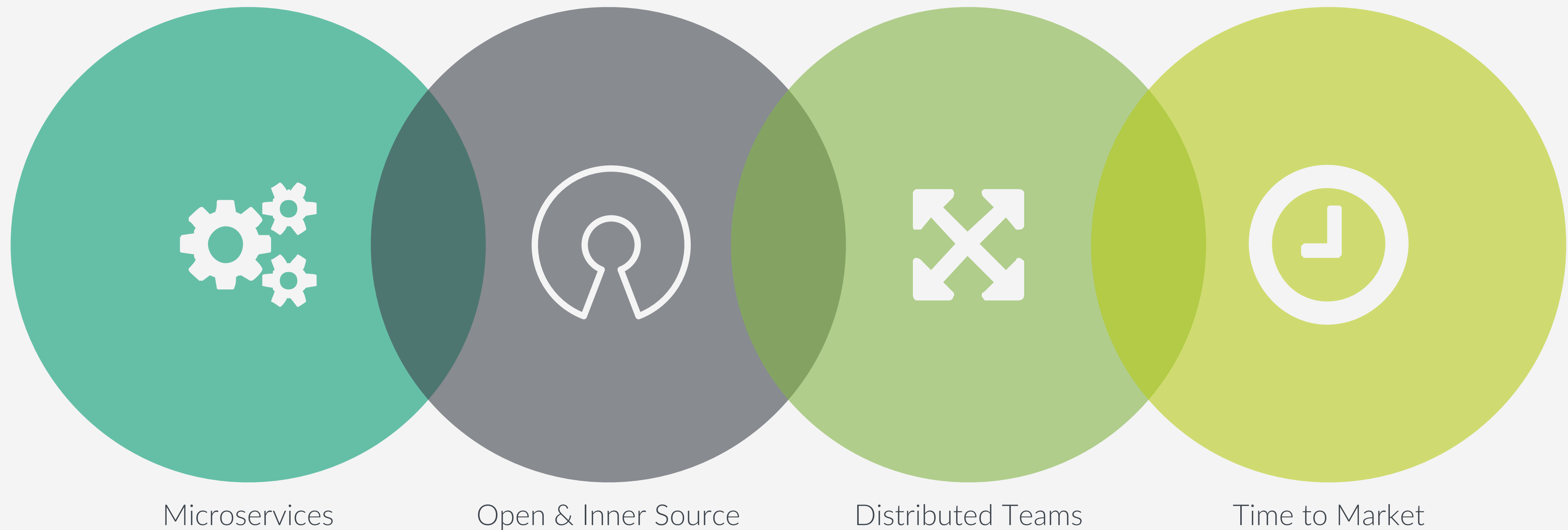
@rorypreddy



AGENDA

1. WHAT IS VS ONLINE?
2. COMPUTE SECURITY
3. NETWORK SECURITY
4. STORAGE SECURITY
5. PERMISSIONS
6. CONFIGURATION
7. DATA SOVEREIGNTY
8. PRIVACY
9. PRICING
10. ROADMAP

TRENDS



WHAT IS VS ONLINE?



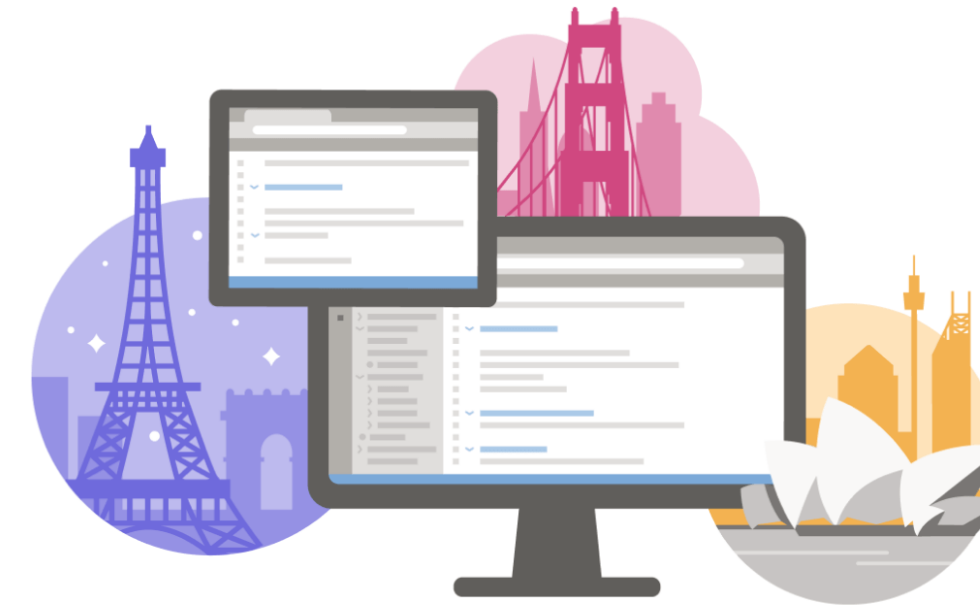
MANAGED ENVIRONMENTS FOR ANY PROJECT

Fully-managed, on-demand dev environments that dramatically reduce setup and maintenance



FEEL AT HOME EVEN WHEN AWAY

Environment requirements are auto-detected, but can be configured, and your settings, themes, Git identity, and dotfiles are roamed so the experience looks and feels like local



DEVELOP FROM ANYWHERE

Connect from anywhere: Visual Studio, Visual Studio Code, browser-based companion editor



SUPERCHARGED COLLABORATIVE DEVELOPMENT

Fully collaborative environment, complete with AI-assisted development support

WHAT IS A DEV ENVIRONMENT?



WHAT IS A DEV ENVIRONMENT?

Editor



WHAT IS A DEV ENVIRONMENT?



WHAT IS A DEV ENVIRONMENT?



WHAT IS A DEV ENVIRONMENT?



WHAT IS A DEV ENVIRONMENT?



WHAT IS A DEV ENVIRONMENT?



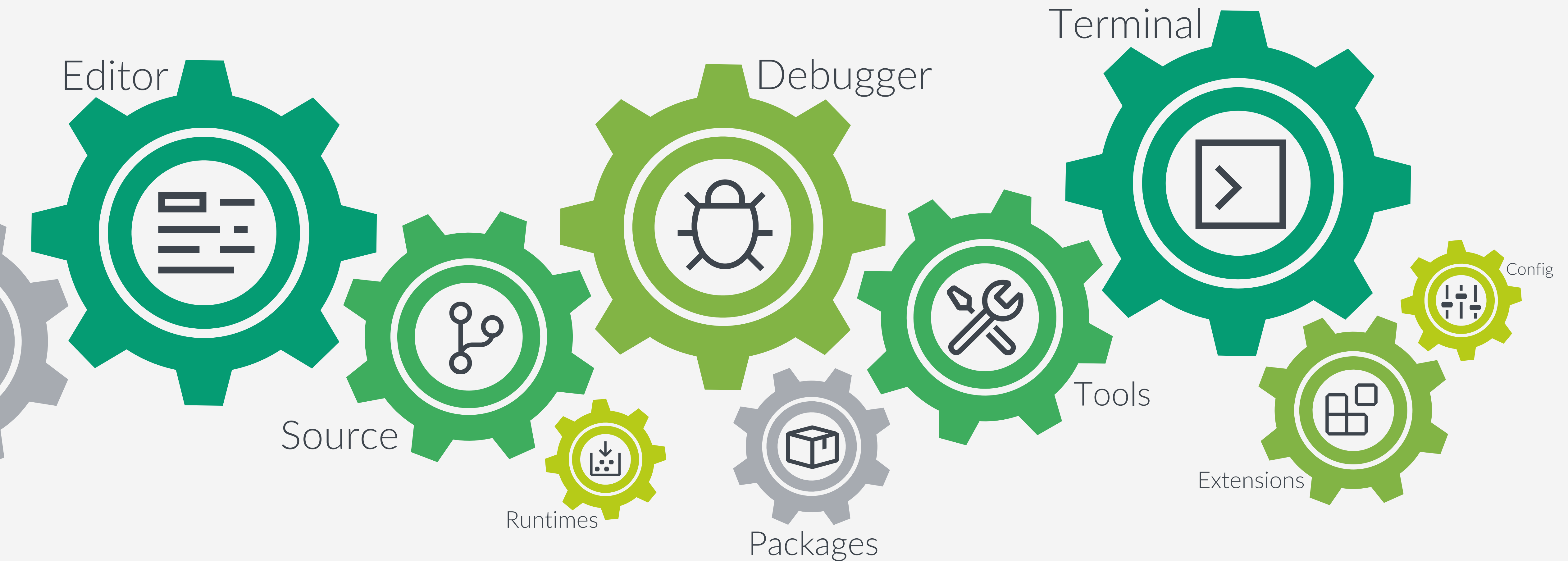
WHAT IS A DEV ENVIRONMENT?



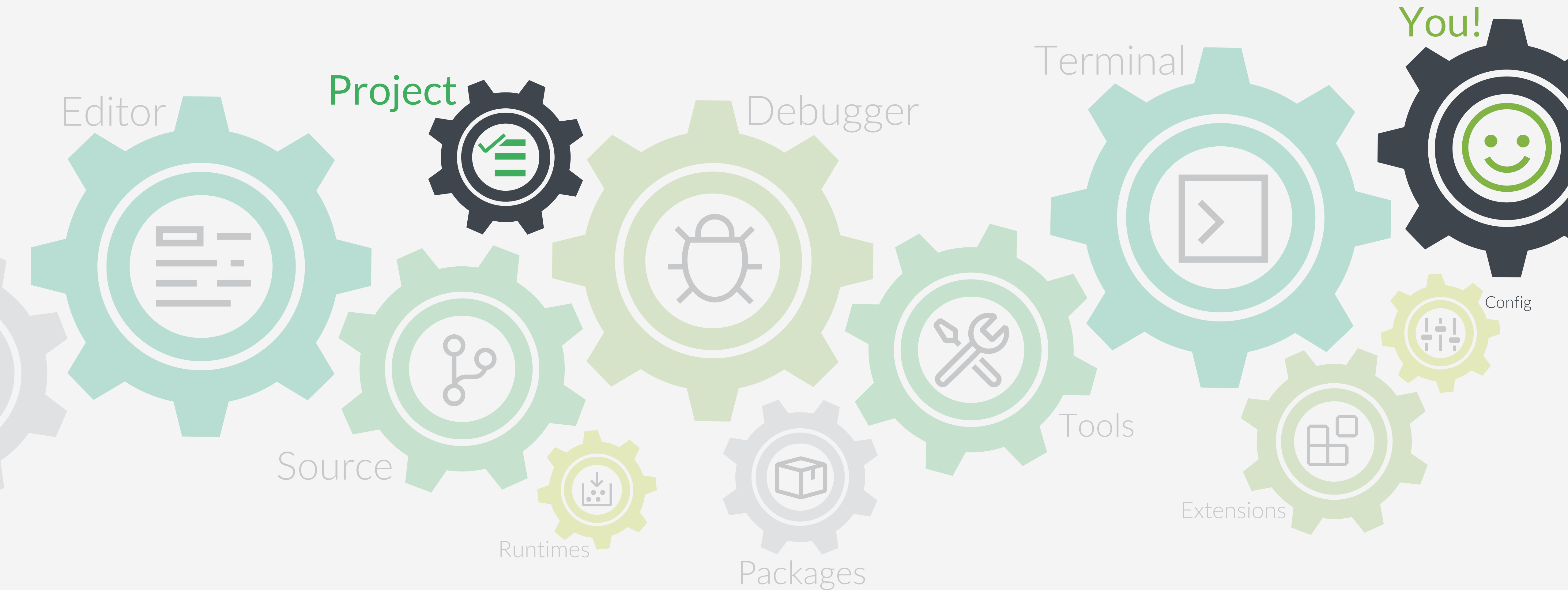
WHAT IS A DEV ENVIRONMENT?



WHAT IS A DEV ENVIRONMENT?

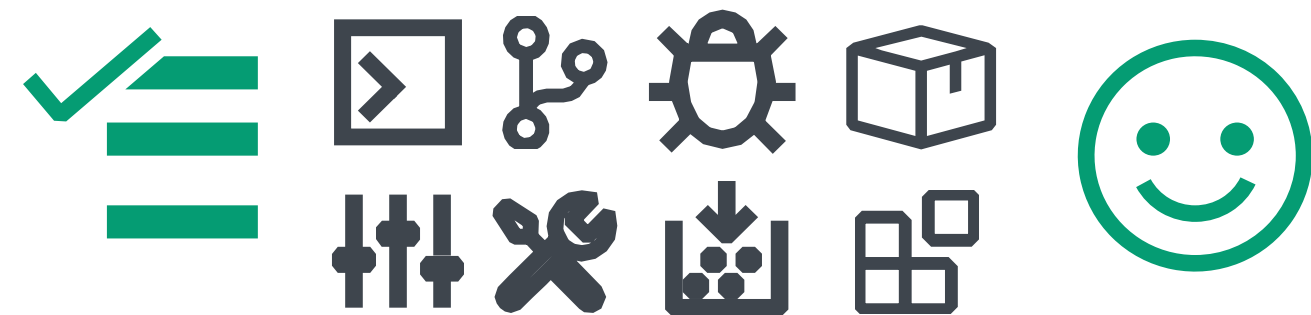


WHAT IS A DEV ENVIRONMENT?



DEV ENVIRONMENT REVIEW

VS ONLINE ENVIRONMENT



CUSTOMIZED FOR YOUR PROJECT

1 SOURCE

2 DEBUGGER

3 PACKAGES

4 EXTENSIONS

5 TERMINAL

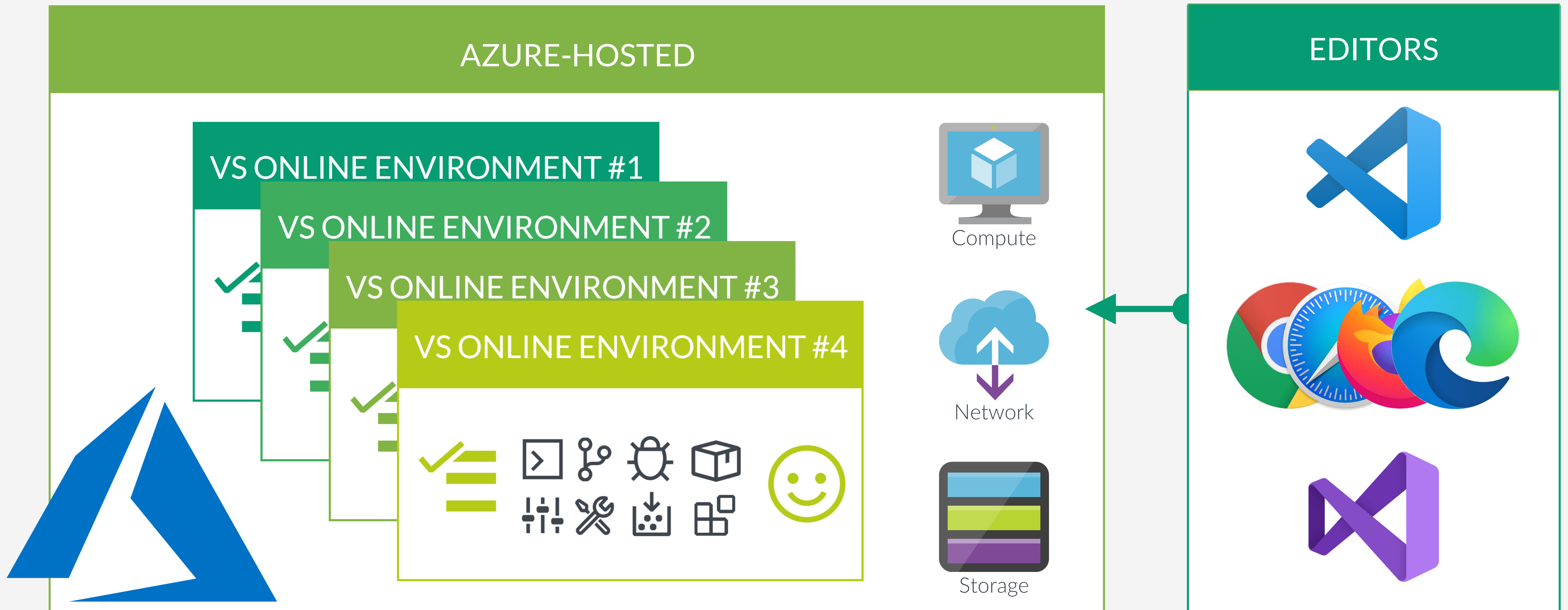
6 RUNTIMES

7 TOOLS

8 CONFIG

PERSONALIZED FOR YOU

VISUAL STUDIO ONLINE



VISUAL STUDIO ONLINE COMPUTE

1

AZURE HOSTED

Environments are hosted in Azure, the most trusted cloud.

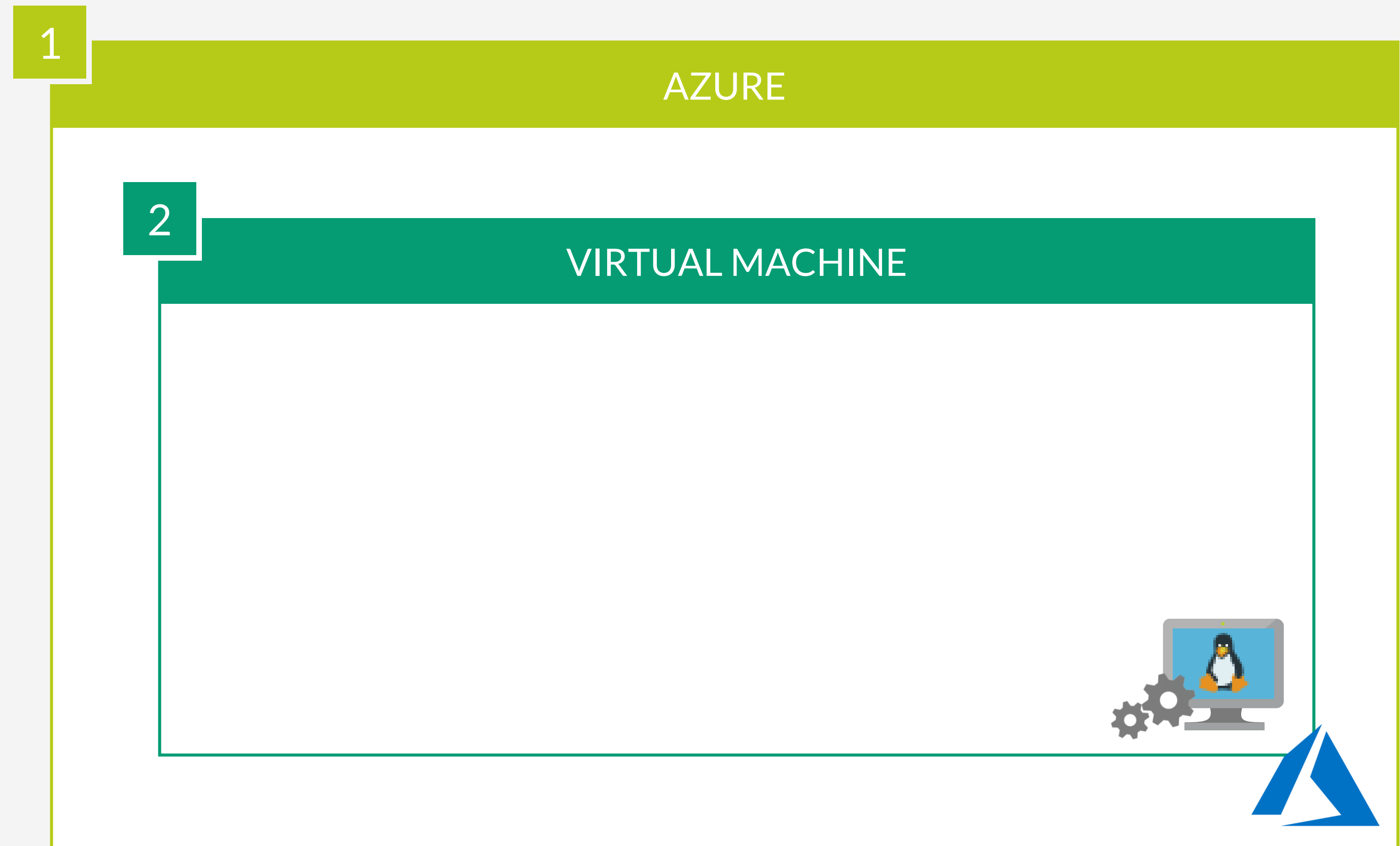
1

AZURE



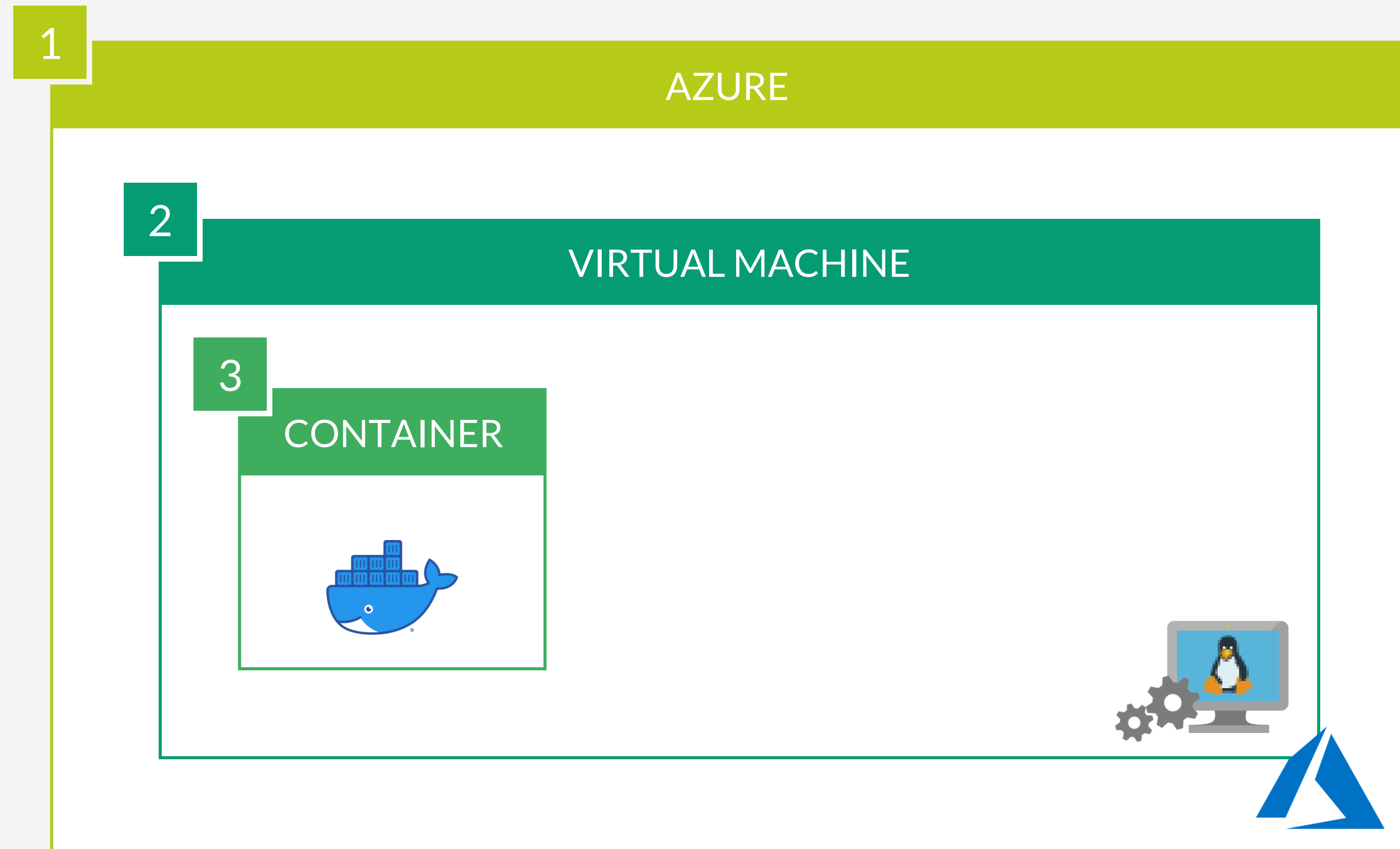
VISUAL STUDIO ONLINE COMPUTE

- 1 AZURE HOSTED**
Environments are hosted in Azure, the most trusted cloud.
- 2 VIRTUAL MACHINE ISOLATION**
Each environment runs on a dedicated VM which is automatically suspended and deleted when not in use to reduce costs.



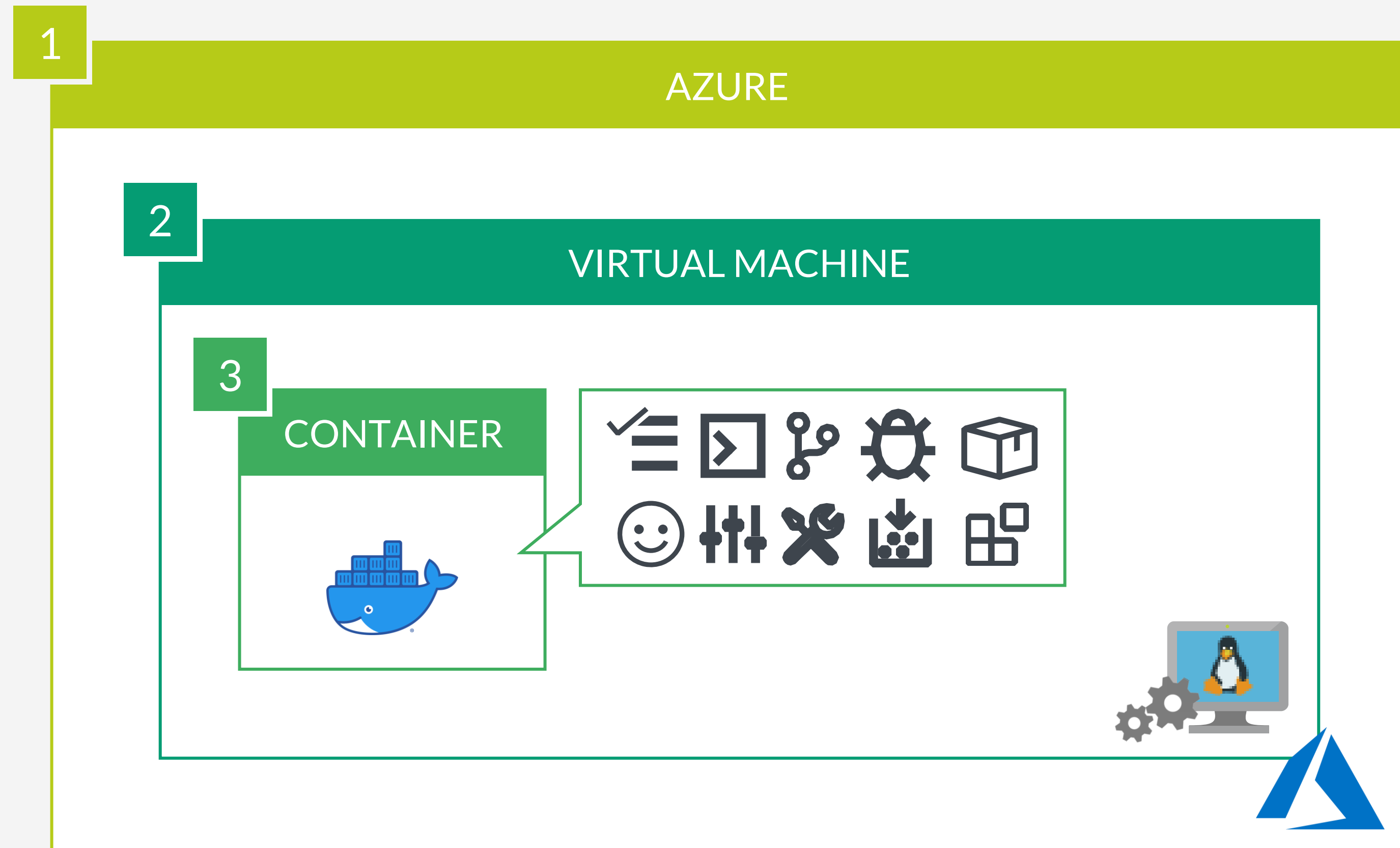
VISUAL STUDIO ONLINE COMPUTE

- 1 AZURE HOSTED**
Environments are hosted in Azure, the [most trusted cloud](#).
- 2 VIRTUAL MACHINE ISOLATION**
Each environment runs on a dedicated VM which is automatically suspended and deleted when not in use to reduce costs.
- 3 ENVIRONMENT CUSTOMIZATION**
Environments run in containers based on our [default image](#), or [your own custom Dockerfile or image](#).



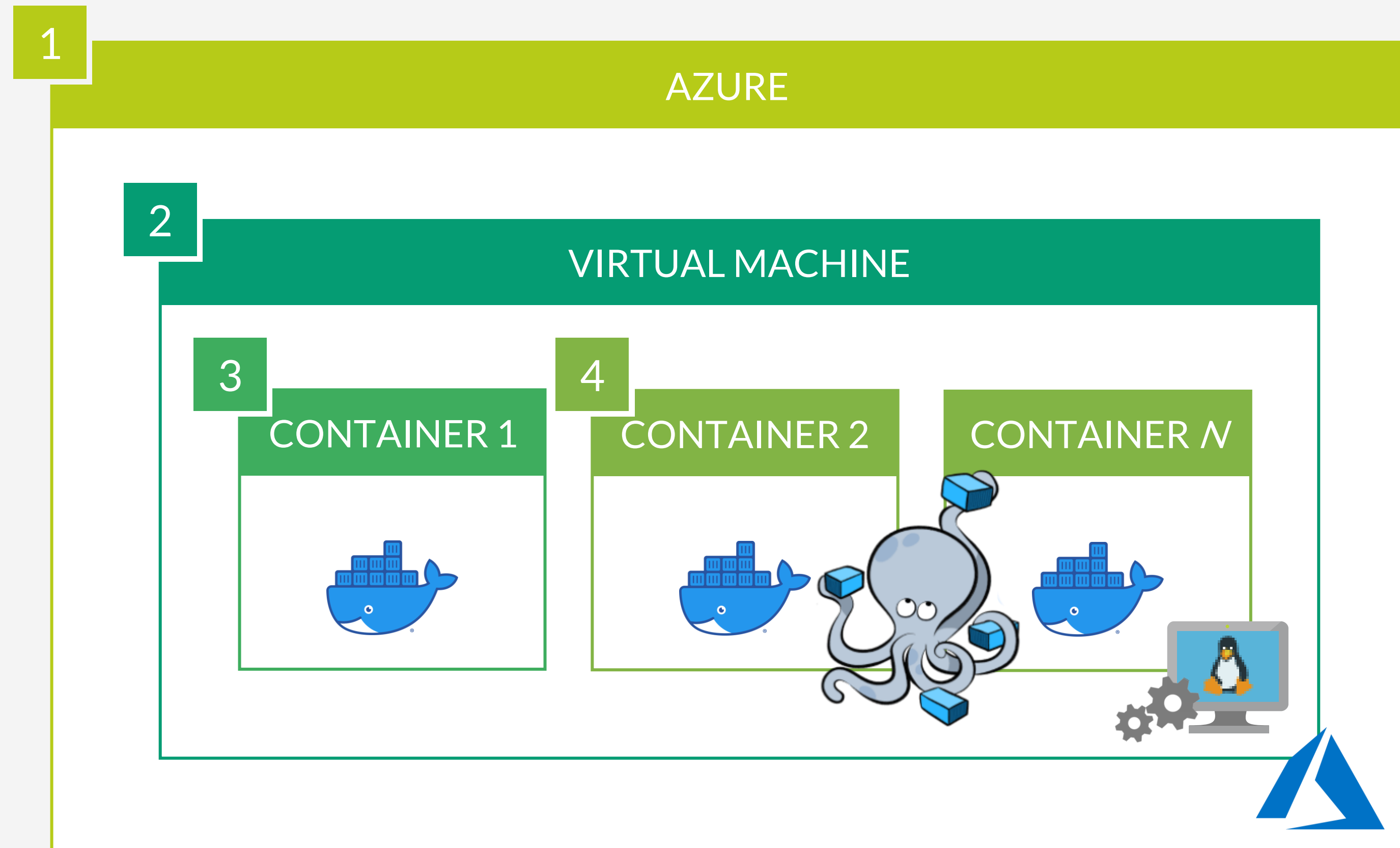
VISUAL STUDIO ONLINE COMPUTE

- 1 AZURE HOSTED**
Environments are hosted in Azure, the [most trusted cloud](#).
- 2 VIRTUAL MACHINE ISOLATION**
Each environment runs on a dedicated VM which is automatically suspended and deleted when not in use to reduce costs.
- 3 ENVIRONMENT CUSTOMIZATION**
Environments run in containers based on our [default image](#), or [your own custom Dockerfile or image](#).



VISUAL STUDIO ONLINE COMPUTE

- 1 AZURE HOSTED**
Environments are hosted in Azure, the [most trusted cloud](#).
- 2 VIRTUAL MACHINE ISOLATION**
Each environment runs on a dedicated VM which is automatically suspended and deleted when not in use to reduce costs.
- 3 ENVIRONMENT CUSTOMIZATION**
Environments run in containers based on our [default image](#), or [your own custom Dockerfile or image](#).
- 4 COMPOSED ENVIRONMENTS**
Compose together complex development environments with [Docker Compose](#) support.*

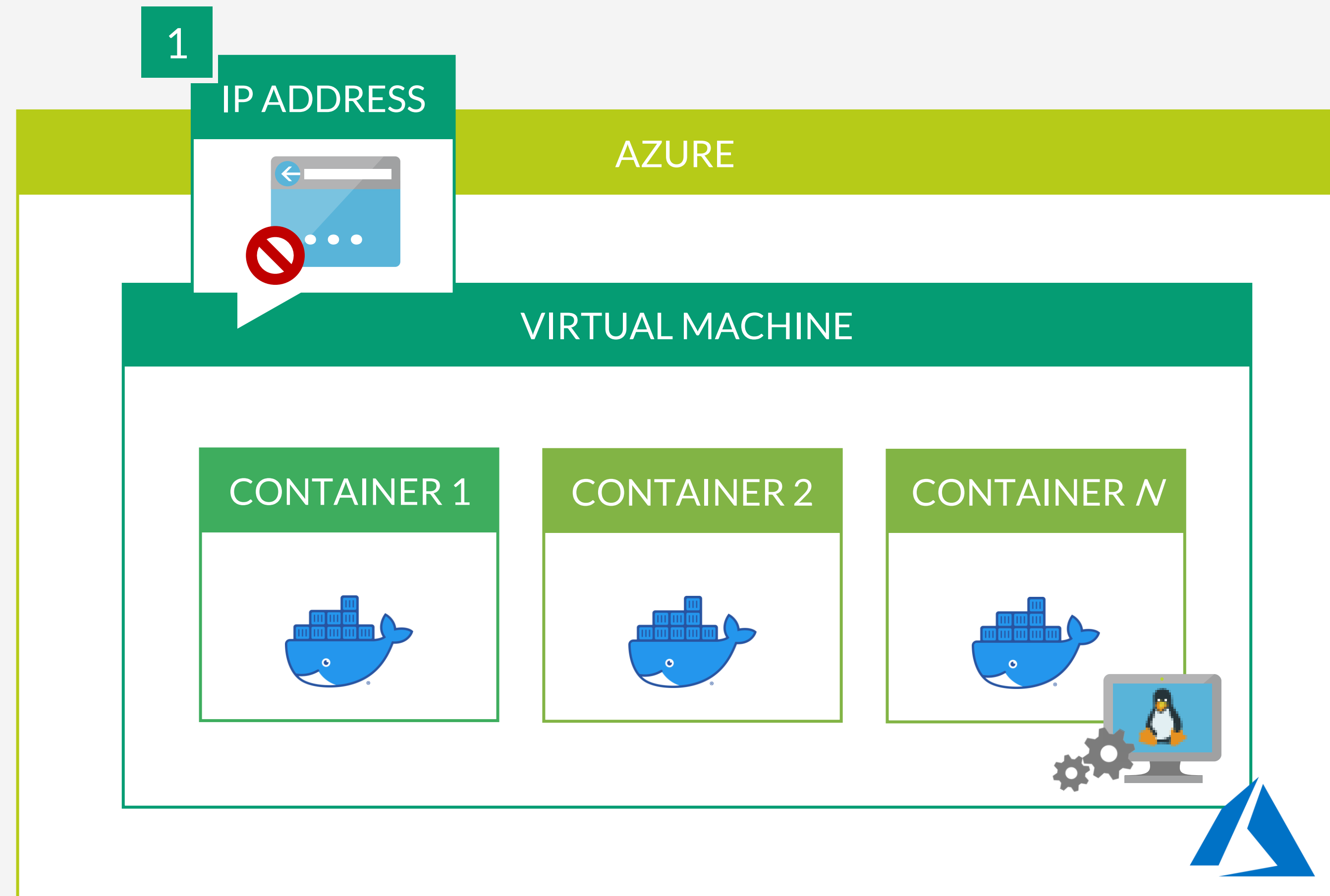


VISUAL STUDIO ONLINE NETWORK

1

NO PUBLIC IP ADDRESS

Environments are not addressable via a public IP.



VISUAL STUDIO ONLINE NETWORK

1

NO PUBLIC IP ADDRESS

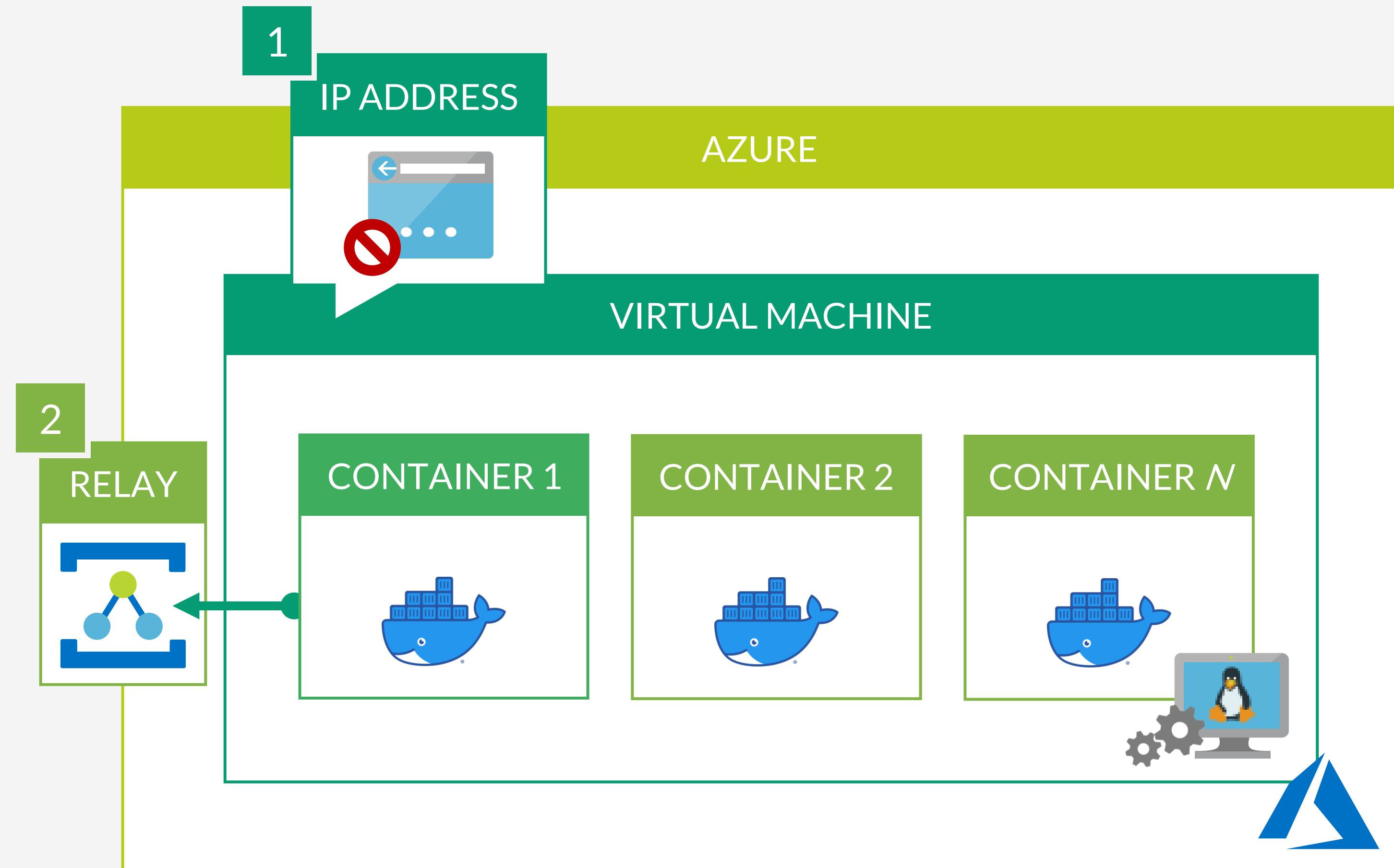
Environments are not addressable via a public IP.

2

NO INBOUND TRAFFIC

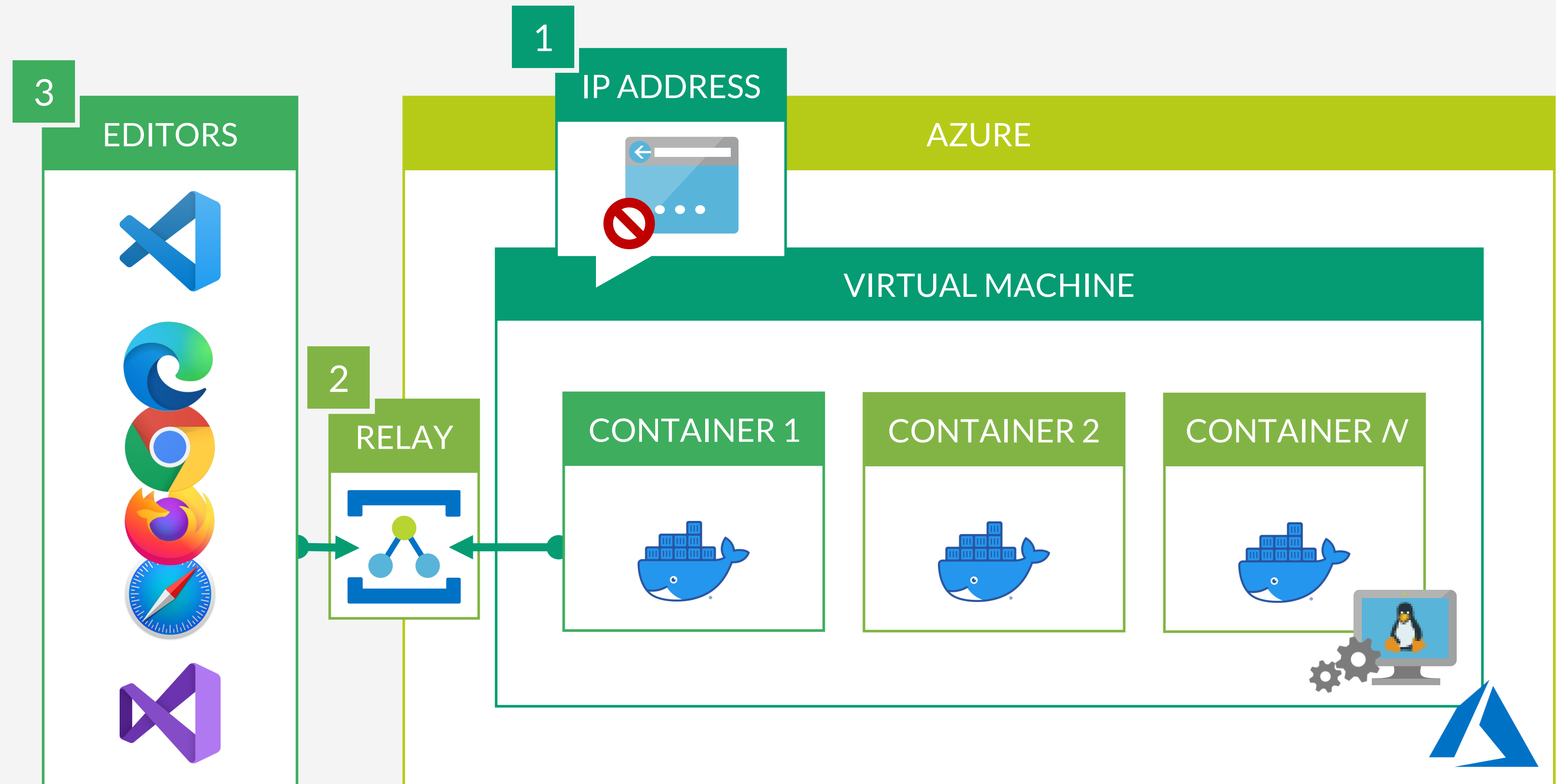
Environments make outbound-only connections to [Azure Relay](#) and are:

- ✓ End-to-end Encrypted
- ✓ Authenticated
- ✓ Authorized



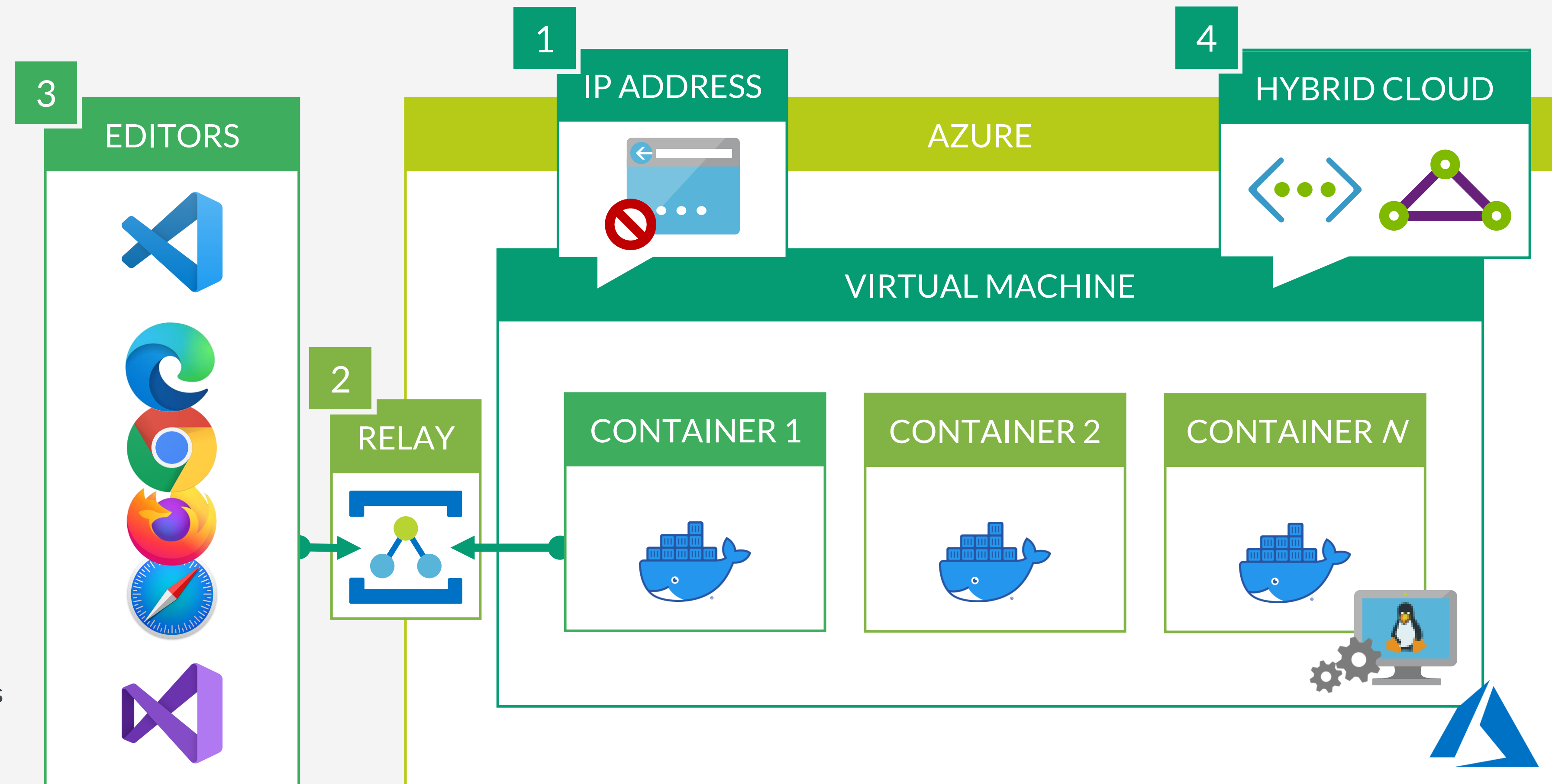
VISUAL STUDIO ONLINE NETWORK

- 1 NO PUBLIC IP ADDRESS**
Environments are not addressable via a public IP.
- 2 NO INBOUND TRAFFIC**
Environments make outbound-only connections to [Azure Relay](#) and are:
 - ✓ End-to-end Encrypted
 - ✓ Authenticated
 - ✓ Authorized
- 3 CONNECTED CLIENTS**
Clients also leverage Azure Relay to eliminate intrusive changes to firewall and network infrastructure.



VISUAL STUDIO ONLINE NETWORK

- 1 NO PUBLIC IP ADDRESS**
Environments are not addressable via a public IP.
- 2 NO INBOUND TRAFFIC**
Environments make outbound-only connections to [Azure Relay](#) and are:
 - ✓ End-to-end Encrypted
 - ✓ Authenticated
 - ✓ Authorized
- 3 CONNECTED CLIENTS**
Clients also leverage Azure Relay to eliminate intrusive changes to firewall and network infrastructure.
- 4 HYBRID CLOUD**
Private [virtual networks](#) and connections (via [ExpressRoute](#)).*

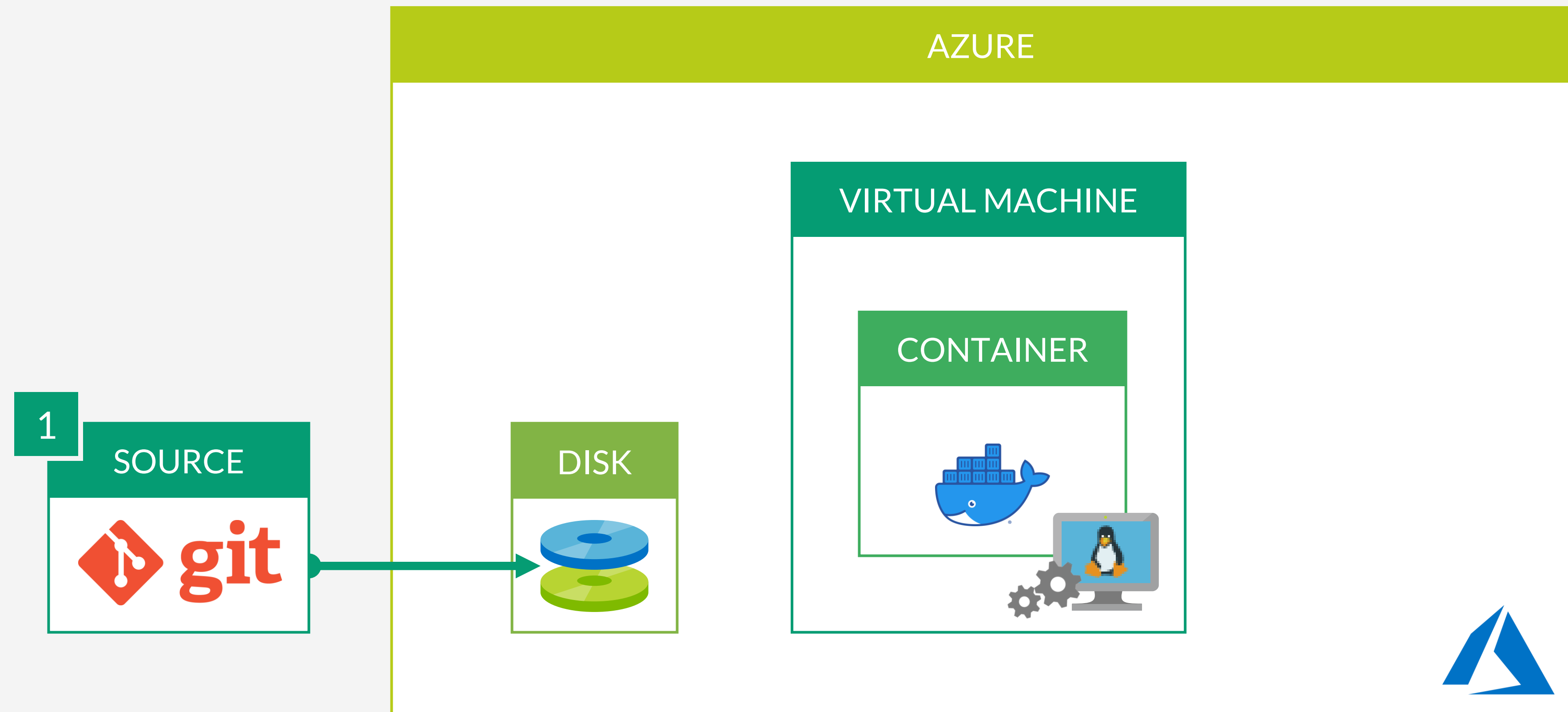


VISUAL STUDIO ONLINE STORAGE

1

SOURCE OF TRUTH

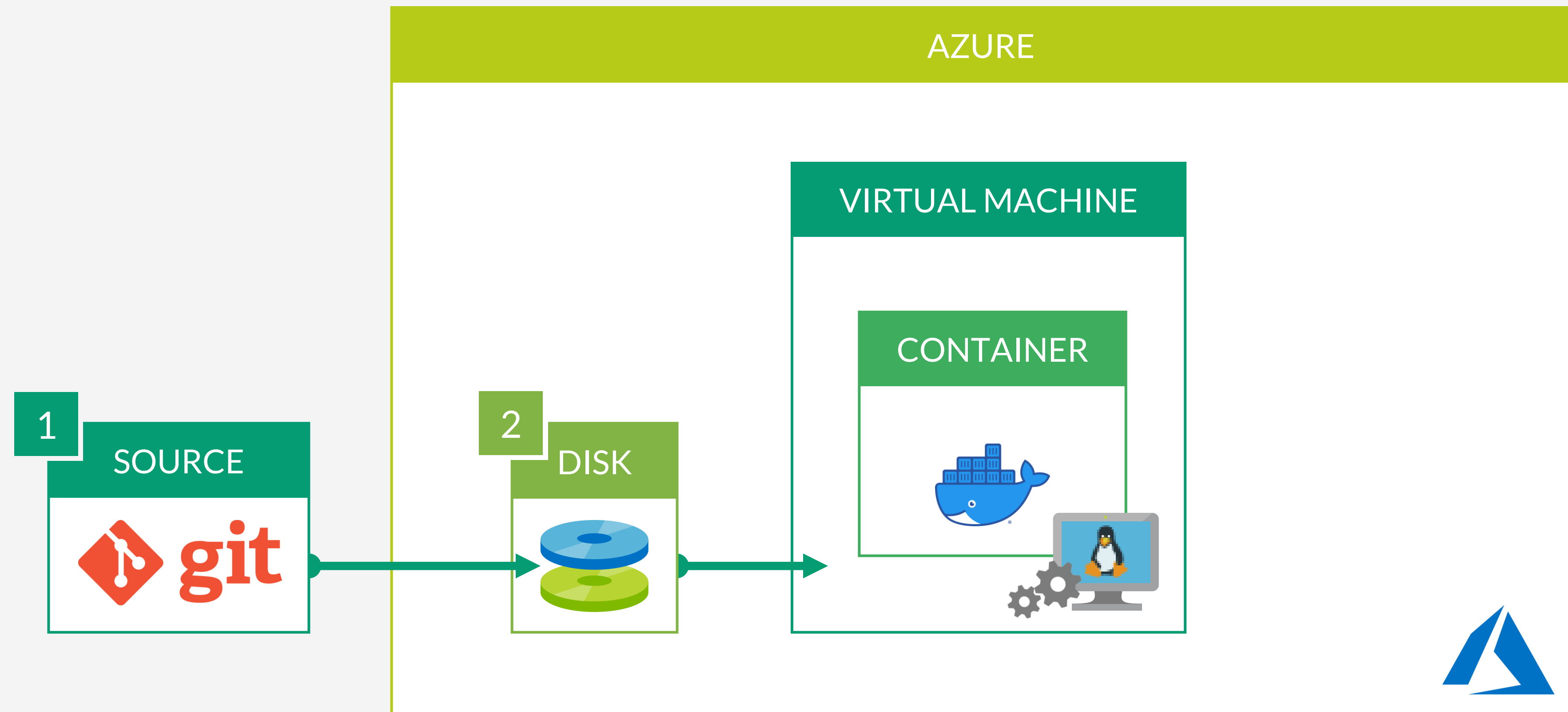
VS Online leverages existing [Git](#) repositories as the source of truth.



VISUAL STUDIO ONLINE STORAGE

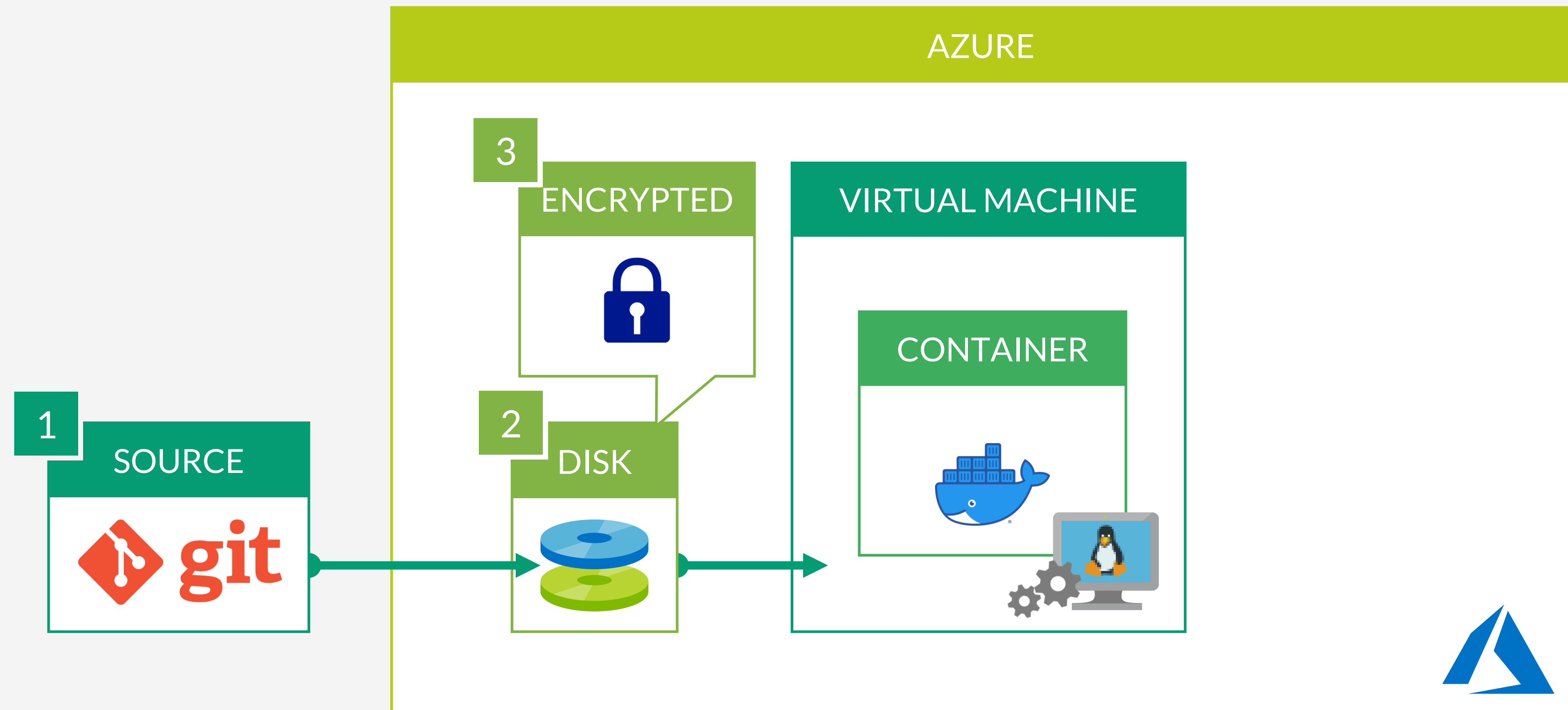
1 SOURCE OF TRUTH
VS Online leverages existing [Git](#) repositories as the source of truth.

2 DEDICATED STORAGE
Each environment runs in its own dedicated and isolated storage account, which is mounted to the VM when active.



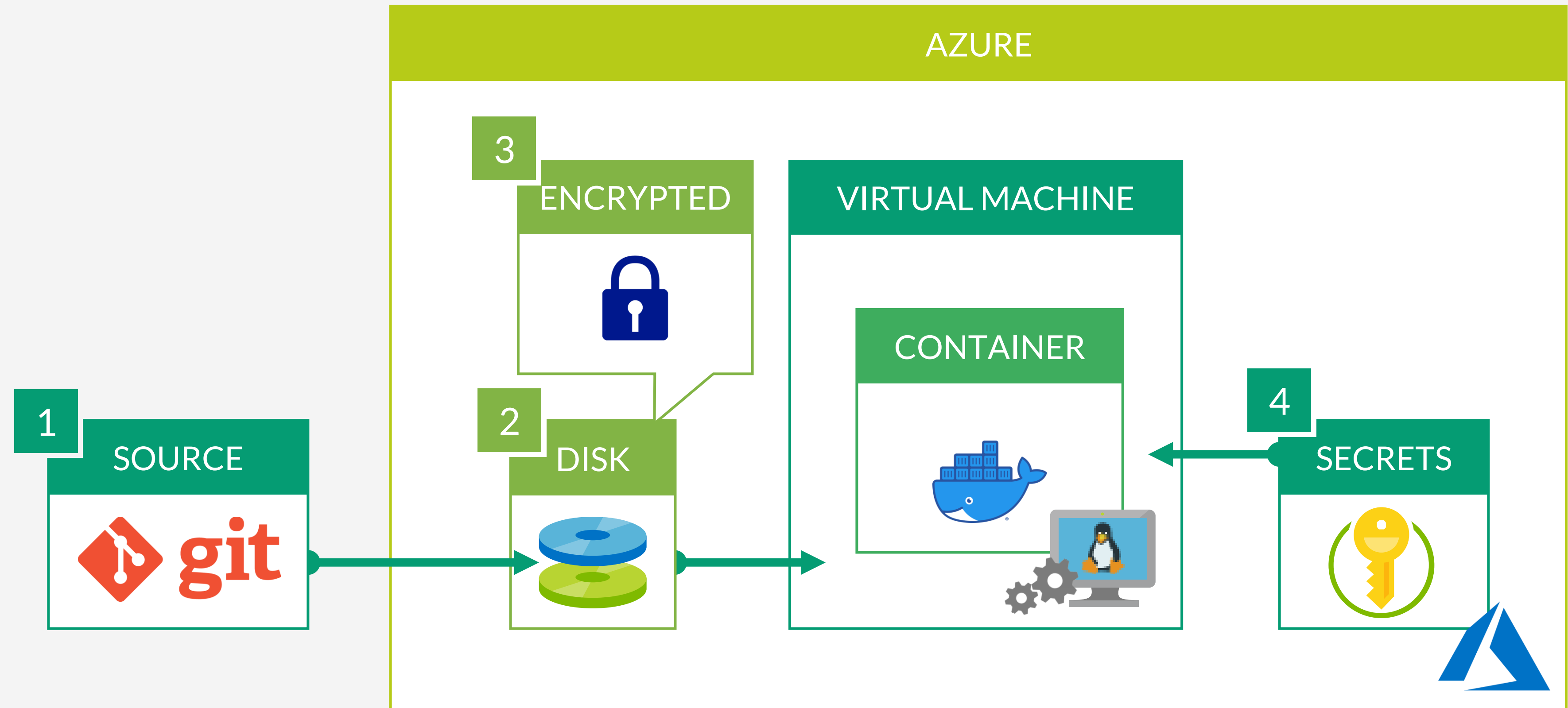
VISUAL STUDIO ONLINE STORAGE

- 1 SOURCE OF TRUTH**
VS Online leverages existing [Git](#) repositories as the source of truth.
- 2 DEDICATED STORAGE**
Each environment runs in its own dedicated and isolated storage account, which is mounted to the VM when active.
- 3 ENCRYPTED AT REST**
Environment [storage is encrypted](#) with Microsoft managed keys to protect data.



VISUAL STUDIO ONLINE STORAGE

- 1 SOURCE OF TRUTH**
VS Online leverages existing [Git](#) repositories as the source of truth.
- 2 DEDICATED STORAGE**
Each environment runs in its own dedicated and isolated storage account, which is mounted to the VM when active.
- 3 ENCRYPTED AT REST**
Environment [storage is encrypted](#) with Microsoft managed keys to protect data.
- 4 SAFEGAURDED SECRETS**
Configured variables and keys are stored within [Azure Key Vault](#) and exposed within the container.*



VISUAL STUDIO ONLINE PERMISSIONS

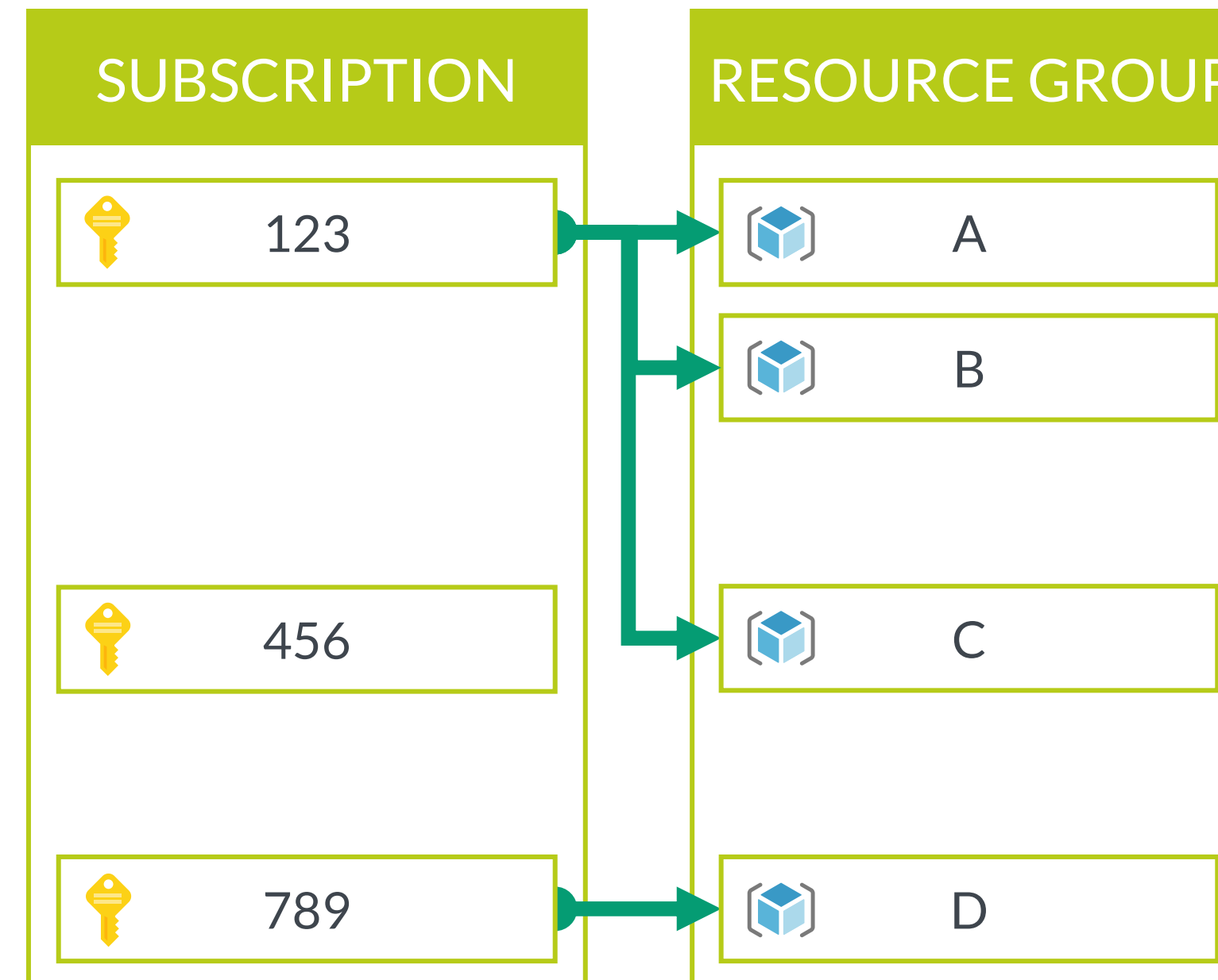
1

FLEXIBLE ORGANIZATION

Use [Azure Subscriptions](#) and [Resource Groups](#) to organize across cost centers, divisions and users.

1

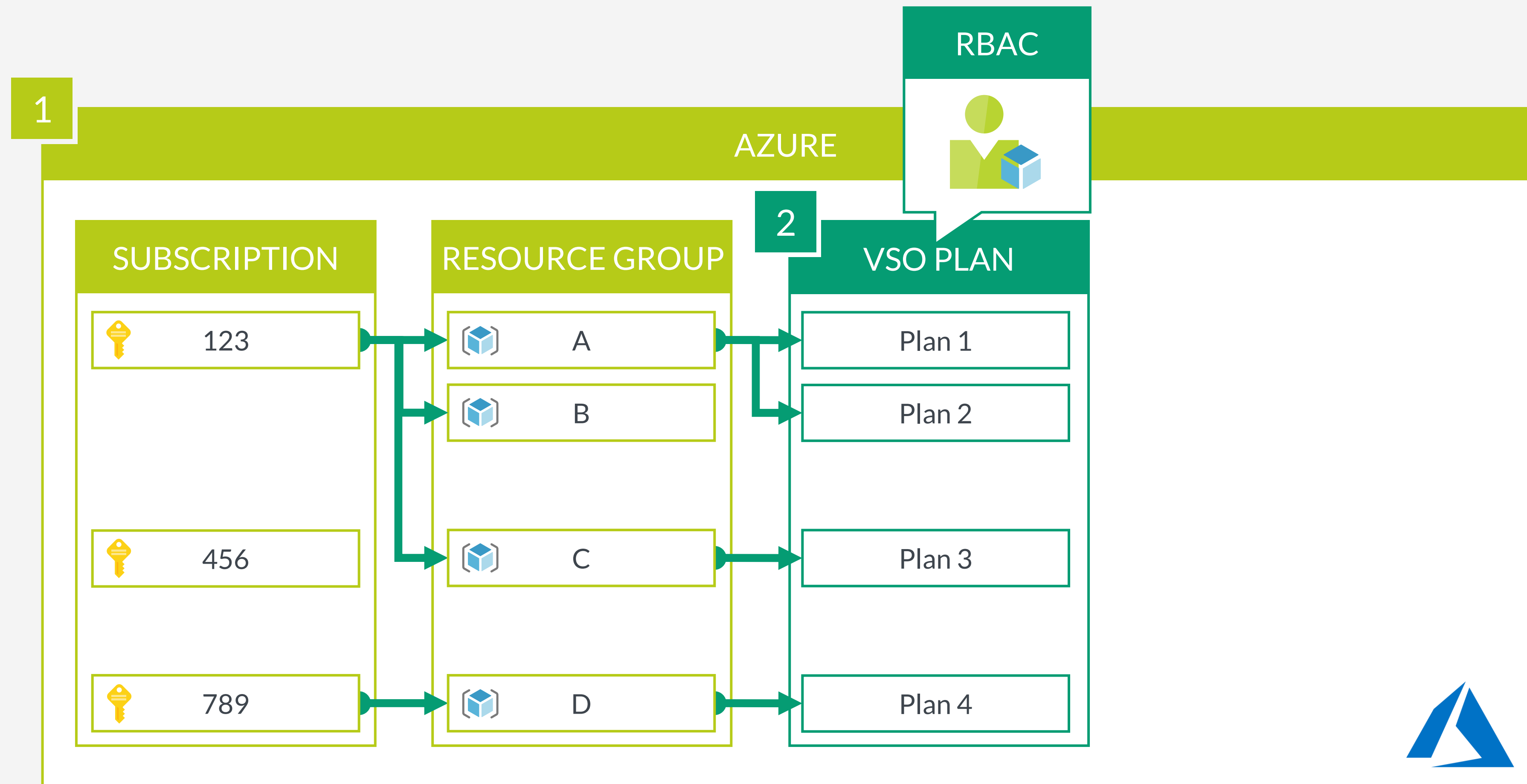
AZURE



VISUAL STUDIO ONLINE PERMISSIONS

1 FLEXIBLE ORGANIZATION
Use [Azure Subscriptions and Resource Groups](#) to organize across cost centers, divisions and users.

2 CONTROL WITH PLANS
[VS Online Plans](#) group environments together to allow simple role-based access control and policy enforcement.*

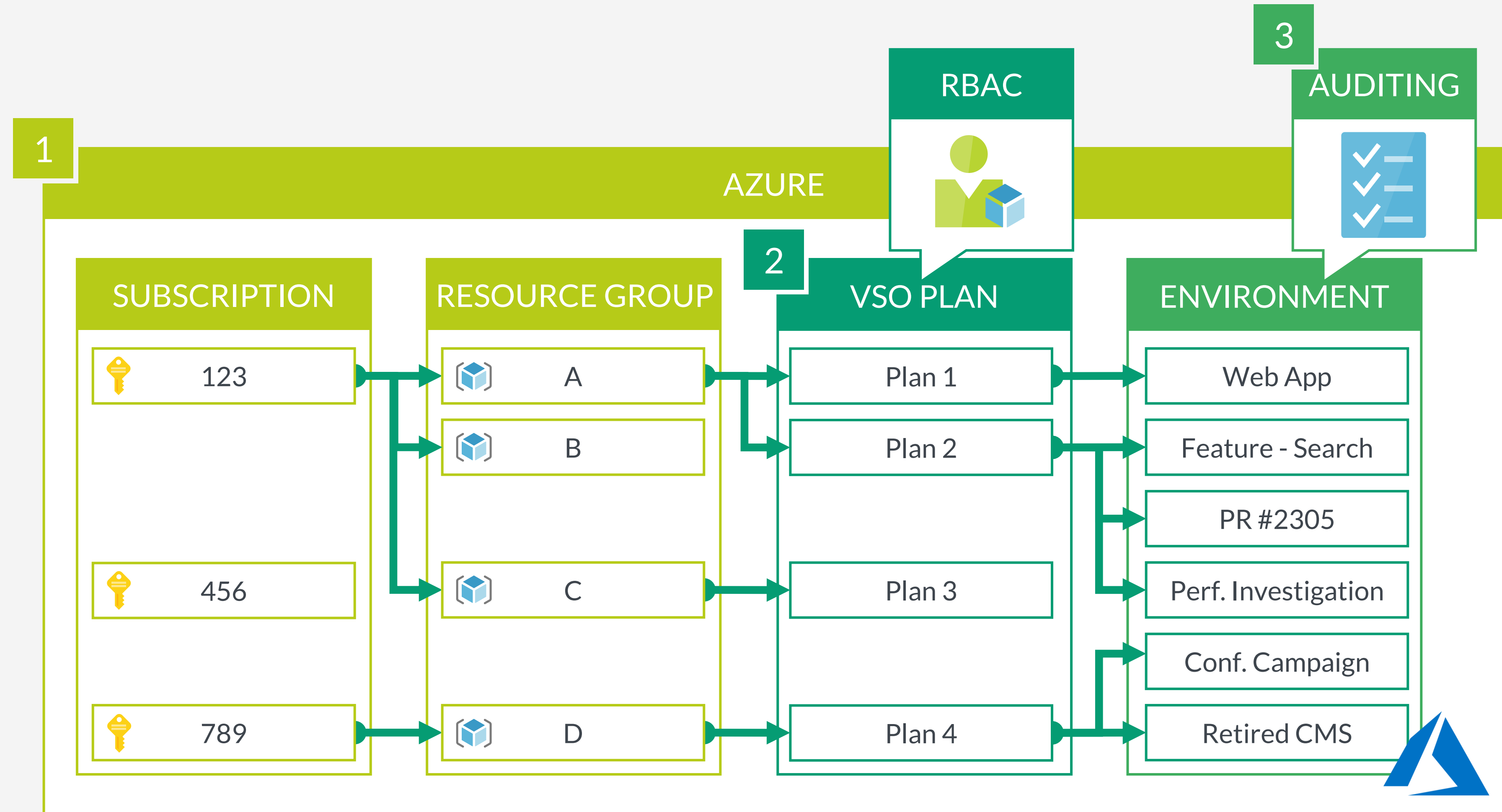


VISUAL STUDIO ONLINE PERMISSIONS

1 FLEXIBLE ORGANIZATION
Use [Azure Subscriptions](#) and [Resource Groups](#) to organize across cost centers, divisions and users.

2 CONTROL WITH PLANS
[VS Online Plans](#) group environments together to allow simple role-based access control and policy enforcement.*

3 AUDIT LOGS
Creation, deletion and access to environments is logged for increased transparency.*



VISUAL STUDIO ONLINE CONFIG

1

"GIT-OPS"

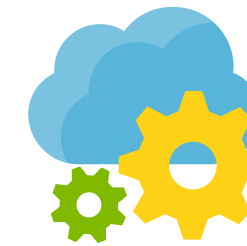
Configuration is versioned in Git. Git credentials are proxied from the client machine, not stored in the environment.

1

SOURCE



ENV CONFIG



VISUAL STUDIO ONLINE CONFIG

1

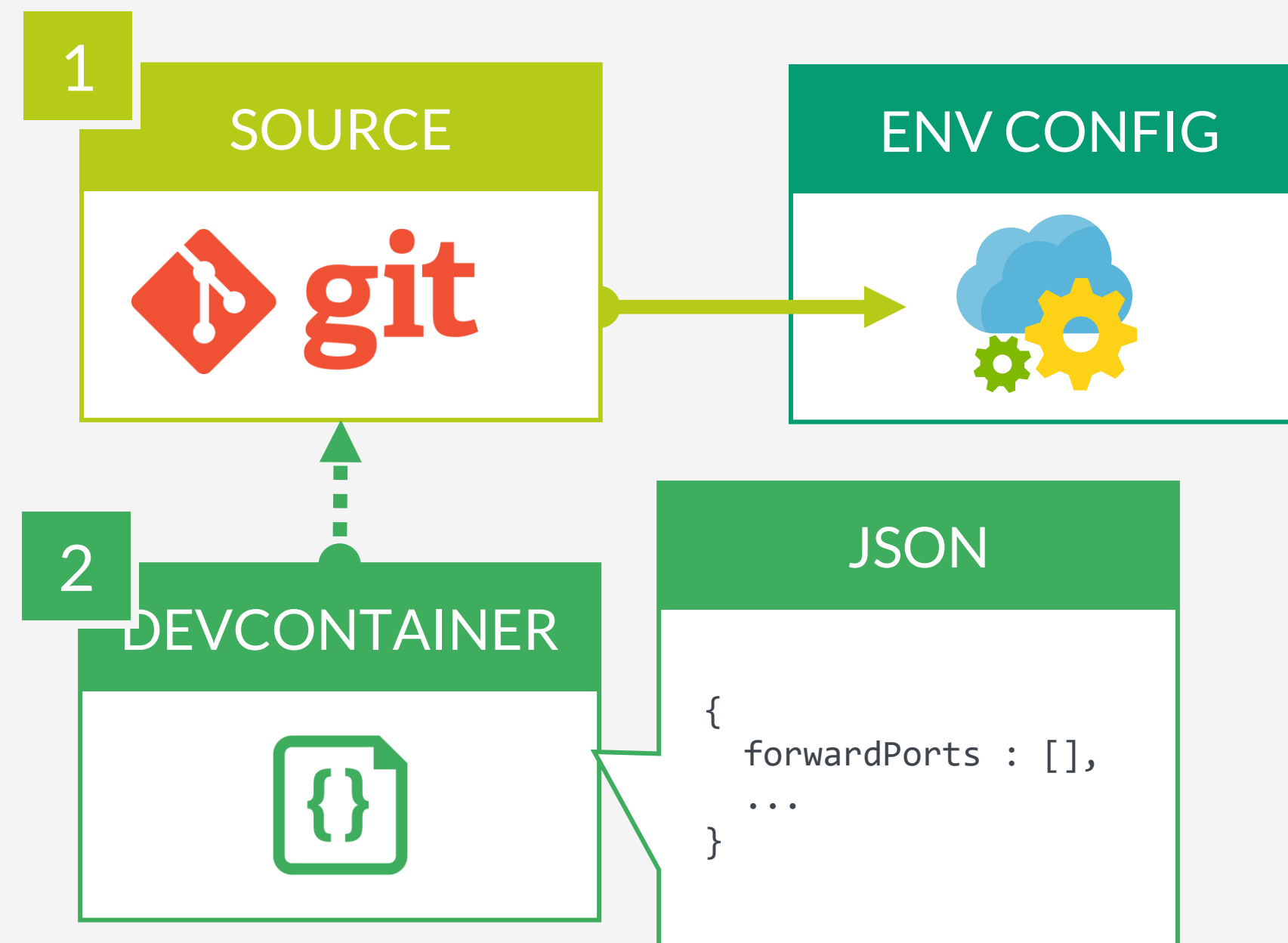
“GIT-OPS”

Configuration is versioned in Git. Git credentials are proxied from the client machine, not stored in the environment.

2

SECURE BY DEFAULT

Configure [devcontainer.json](#) to expose ports to client machine and customize environment container/user.



VISUAL STUDIO ONLINE CONFIG

1

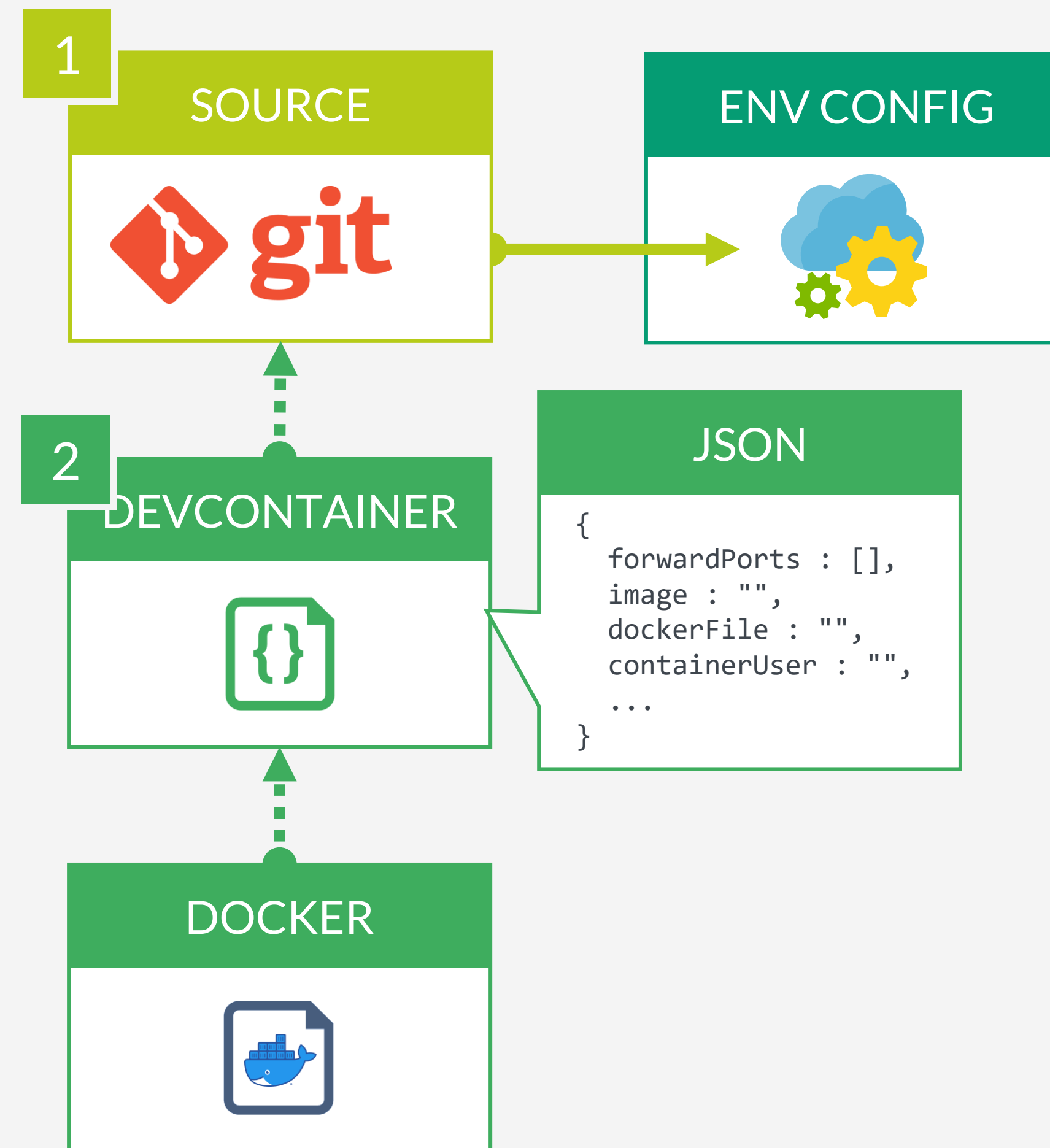
"GIT-OPS"

Configuration is versioned in Git. Git credentials are proxied from the client machine, not stored in the environment.

2

SECURE BY DEFAULT

Configure [devcontainer.json](#) to expose ports to client machine and customize environment container/user.



VISUAL STUDIO ONLINE CONFIG

1

"GIT-OPS"

Configuration is versioned in Git. Git credentials are proxied from the client machine, not stored in the environment.

2

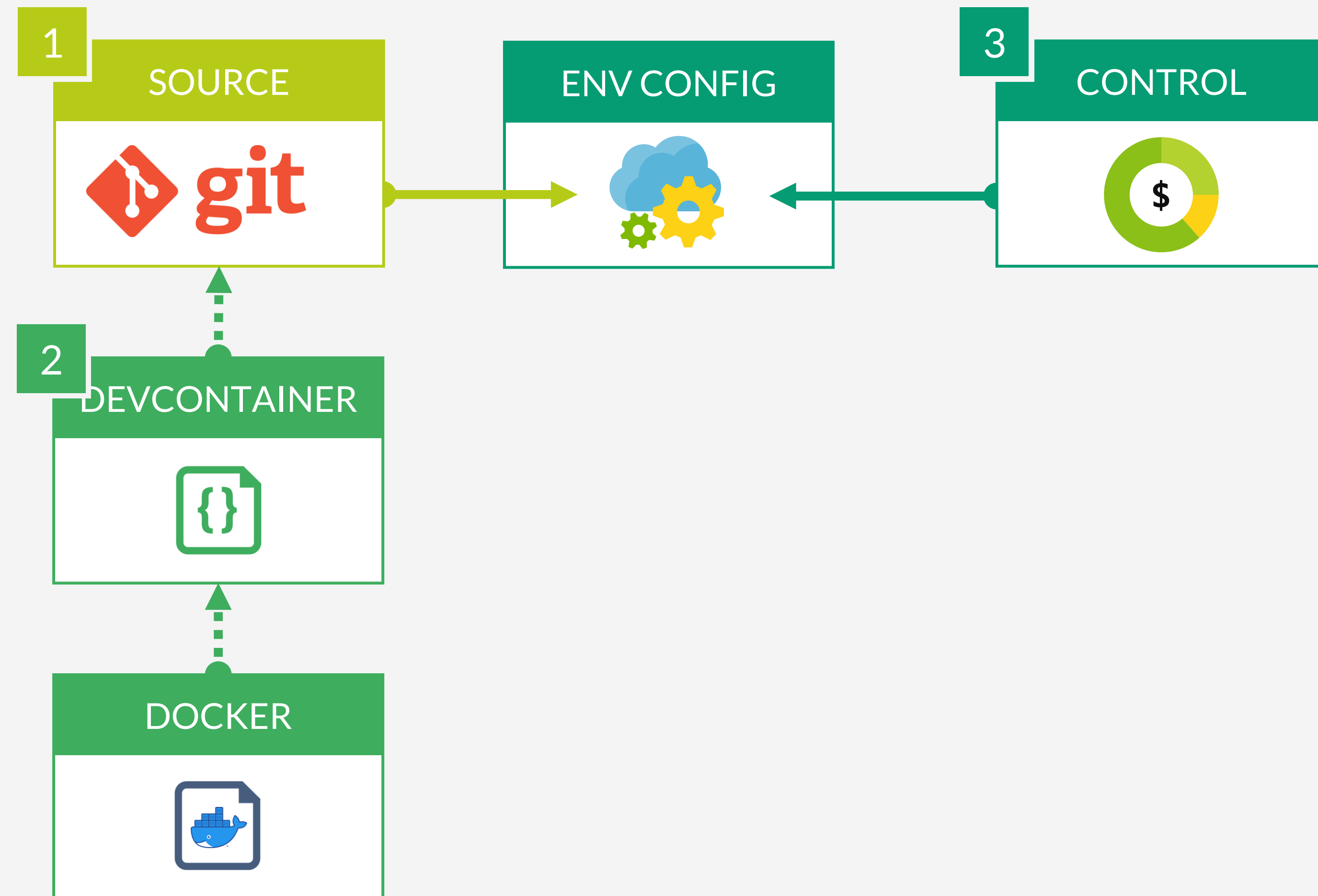
SECURE BY DEFAULT

[Configure devcontainer.json](#) to expose ports to client machine and customize environment container/user.

3

COST CONTROL

Select the virtual machine (Basic, Standard, Premium or GPU) and the auto-suspension policy per environment.



VISUAL STUDIO ONLINE CONFIG

1

"GIT-OPS"

Configuration is versioned in Git. Git credentials are proxied from the client machine, not stored in the environment.

2

SECURE BY DEFAULT

Configure [devcontainer.json](#) to expose ports to client machine and customize environment container/user.

3

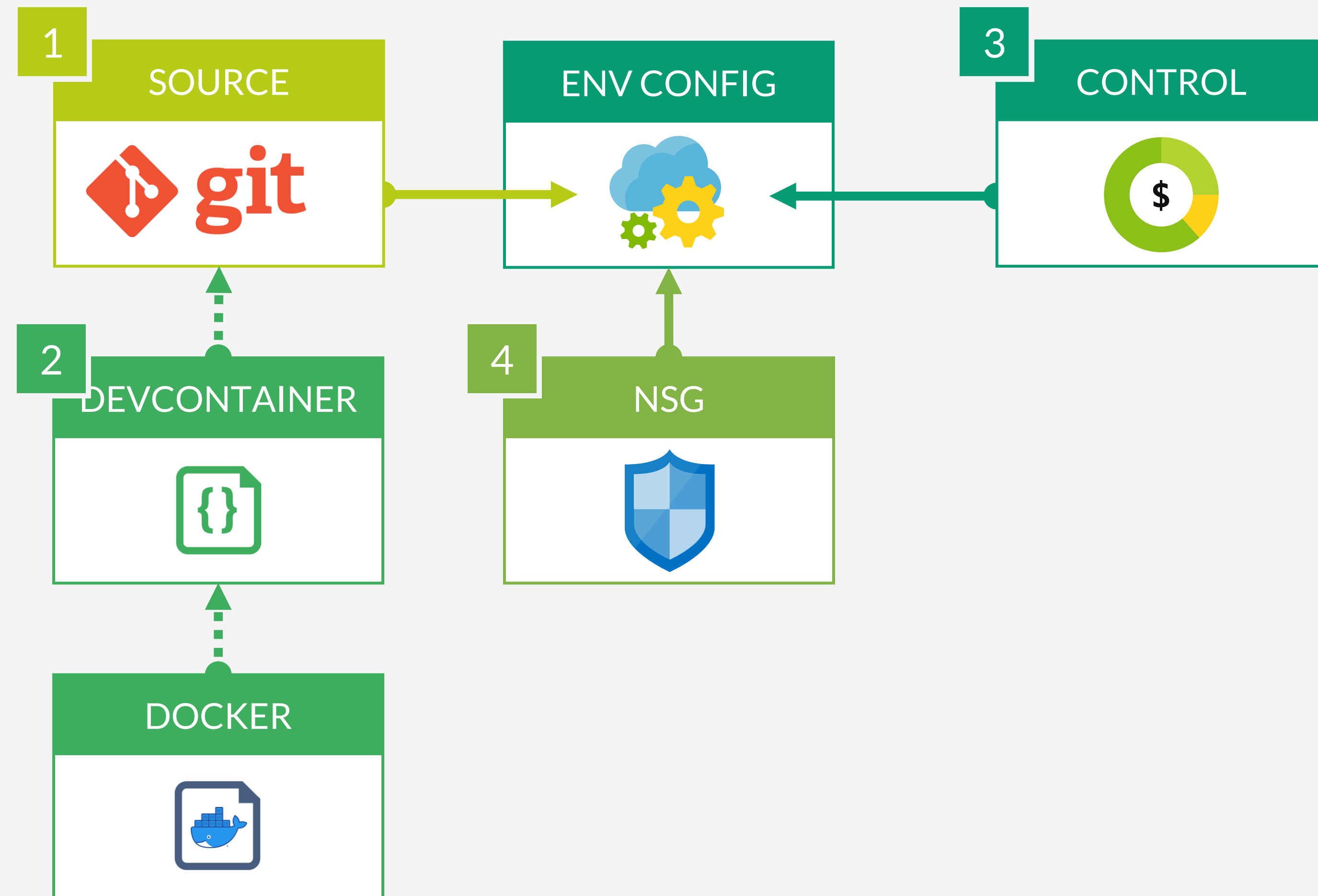
COST CONTROL

Select the virtual machine (Basic, Standard, Premium or GPU) and the auto-suspension policy per environment.

4

NETWORK SECURITY GROUP

Filter outbound network traffic by destination, protocol or port.*



VISUAL STUDIO ONLINE GEOGRAPHIES



VISUAL STUDIO ONLINE PRICING

INSTANCE TYPES / HR

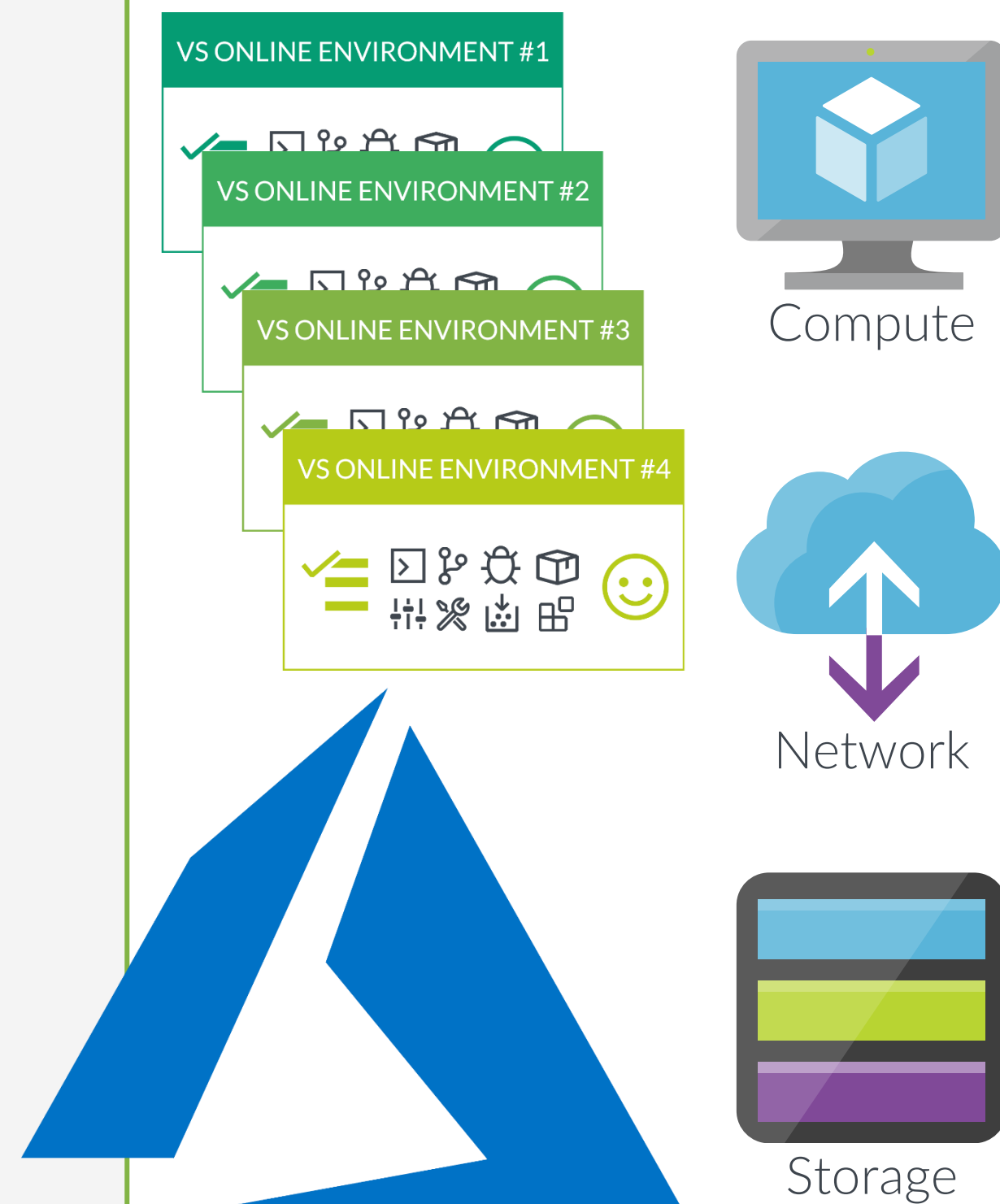
25
¢ **BASIC***
CORES: 2
RAM: 4 GB
DISK: 64 GB SSD

46
¢ **STANDARD**
CORES: 4
RAM: 8 GB
DISK: 64 GB SSD

88
¢ **PREMIUM**
CORES: 8
RAM: 16 GB
DISK: 64 GB SSD

2.75
\$ **GPU***
CORES: 6
RAM: 56 GB
GPU: 1 w/ 12 GB
DISK: 64 GB SSD

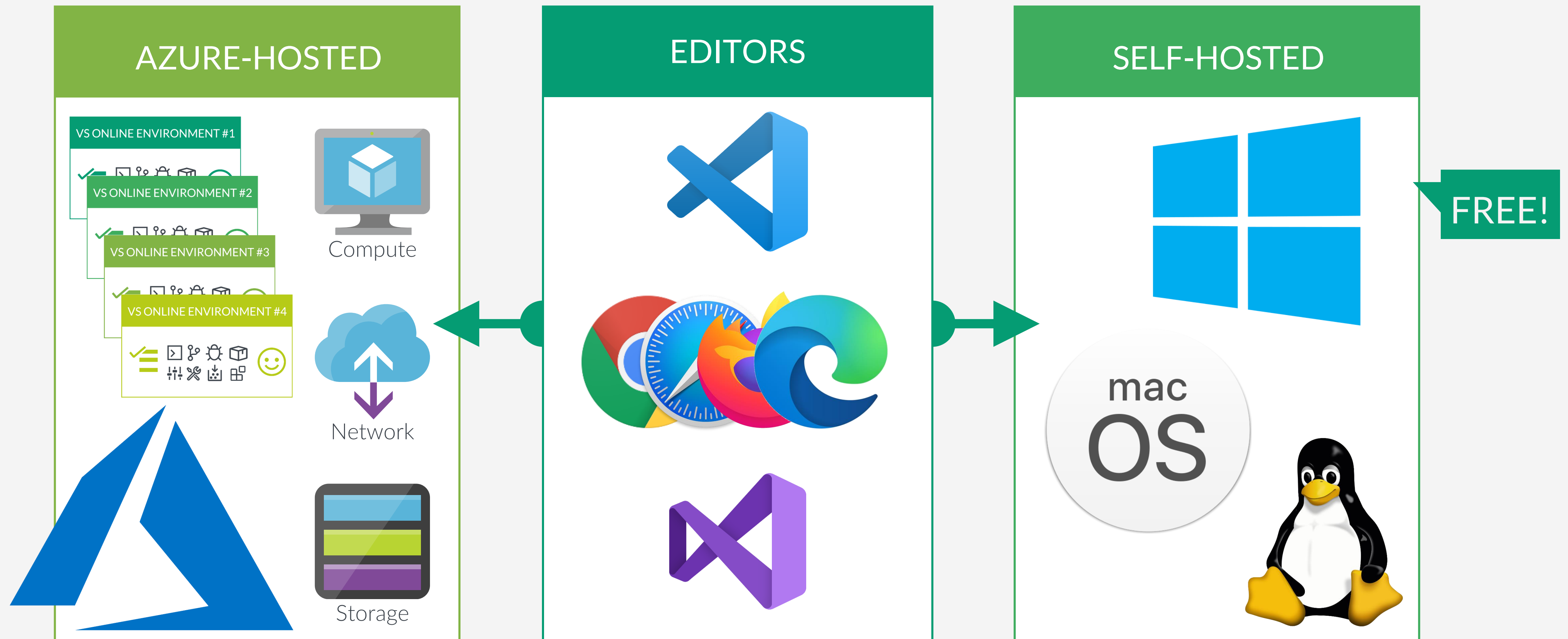
AZURE-HOSTED



EDITORS



VISUAL STUDIO ONLINE PRICING



SUMMARY + QUESTIONS

PUBLIC PREVIEW

VISUAL STUDIO ONLINE



PRIVATE PREVIEW

VISUAL STUDIO ONLINE



GENERAL AVAILABILITY

LIVE SHARE & INTELLICODE



LEARN MORE



<https://aka.ms/vso-docs>

DEMO

